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**Patentanmeldung Nr.**

**Patent application No.**

**Demande de brevet n°**

00202947.8 / EP00202947

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Der Präsident des Europäischen Patentamts;  
Im Auftrag

For the President of the European Patent Office

Le Président de l'Office européen des brevets  
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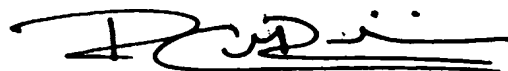
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R.C. van Dijk

Anmeldung Nr:  
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Bezeichnung der Erfindung / Title of the invention / Titre de l'invention:  
(Falls die Bezeichnung der Erfindung nicht angegeben ist, siehe Beschreibung.  
If no title is shown please refer to the description.  
Si aucun titre n'est indiqué se référer à la description.)

**Content processing system, portable device and transfer device**

In Anspruch genommene Priorität(en) / Priority(Priorities) claimed / Priorité(s) revendiquée(s)  
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Content processing system, portable device and transfer device

EPO - DG 1

23. 08. 2000

(61)

The invention relates to a content processing system.

The invention further relates to a portable content processing device.

The invention further relates to a transfer device for use with such a portable content processing device.

5

Electronic commerce provides unprecedented opportunities for consumers to browse, select and purchase products, and also provides opportunities for alternative market and sales techniques. Conventionally, electronic commerce requires a somewhat pro-active consumer role. The consumer searches the Internet for a particular product, selects a vendor and submits a request to purchase the item. Alternatively, a consumer visits a website for information, perhaps with no intent to purchase anything, and is presented an advertisement for a product. Then the consumer "clicks" on the advertisement, decides whether to purchase the item, and then submits the purchase request. In like manner, the consumer receives e-mail containing an advertisement, reviews the information, either directly or via an Internet link, decides whether to purchase the product, and then submits the purchase request. In each of these scenarios, the consumer utilizes a bi-directional communications device to contemporaneously receive the information and submit the purchase request.

As is well known in the art of marketing and advertising, "impulse shopping" provides an opportunity for significant product revenue. Products are placed within easy reach while waiting in a cashier queue, "specials" are announced over loudspeaker systems in a department store, and so on. Television commercials often contain a notification of a telephone number to call to order a product being advertised, or to order a copy of the program being broadcast at that time. This technique has been applied to e-commerce systems, for example by providing "click here to purchase" icons on webpages or e-mail advertisements. The opportunities for impulse shopping, however, are limited to the specific environments or occasions that allow for such impulse buys, and, in the case of e-commerce, typically require a contemporaneous bi-directional communications link between the consumer and the product supplier.

Digital broadcasting systems will make a large amount of content items available to users. Current Internet content processing systems, such as real-time audio receivers, allow a user to store an identifier for a content item in a local database, to serve as a bookmark to retrieve the item later so it can be processed again. If the user likes such a  
5 bookmarked item, he may want to shop for it at an e-commerce system. The current procedure to do this is rather cumbersome. First, the user must find the identifier, and then go to the e-commerce system and try to find it. He might have to look for it using different identifiers. Usually the identifier is a code such as an ISBN, which is hard to remember and easy to mistype. Further, the identifier may not even be shown to the user or be present in his  
10 bookmark file. The user then cannot know easily which item he is supposed to look for. By the time he has found it, his impulse to buy it will long since have gone.

It is an object of the invention to provide a method according to the preamble,  
15 which facilitates impulse shopping in an e-commerce system.

This object is achieved in a content processing system comprising a receiver for receiving a content item from a source for rendering the content item to a user, an input device for marking the content item as being of interest to the user; and a tracking device for  
20 in response to said marking automatically providing an identifier for the marked content item to an e-commerce system.

This content processing system, which can be a system such as a television receiver, a set-top box, a radio or a general purpose computer, allows the user to mark content items, such as television programs or items shown in advertisements, as being of interest. This information is of importance in an e-commerce system, as a user will be more  
25 inclined to buy such items, especially at the moment he is confronted with them. For example if the user hears a song and uses the input device to signal this, he will be more likely to respond positively to an immediate offer to buy the CD single or MP3 version of the song, especially if it is offered at a discount. Further, the user is now no longer required to actively seek out the content item, or information related to it, on the e-commerce system when it is  
30 processed on the device. Rather, he simply marks it using the input device, and he can recall the marked items for further processing, if any, when he is using the e-commerce system.

In an embodiment the content processing system further comprises a rendering device for rendering the received content item to the user. An advantage of this embodiment is that the marking operation can now be associated with the content item being rendered.

This requires very little activity on the part of the user, as he now simply sees or hears the content item and presses a button for impulse shopping that item.

In a further embodiment the tracking device is arranged to add the identifier for the marked content item to a shopping list for the user. An advantage of this embodiment is that the user is minimally distracted from his listening or viewing experience with the content item, and still has the content item available for shopping when he is ready to do so. He can, for example, go shopping the next morning, and then he will see the marked content item or items on his shopping list and be more inclined to buy it, as he will then recall that he found those items to be of interest the previous day.

In a further embodiment the content processing system is arranged to obtain a list of items related to the marked content item from the e-commerce system in response to providing the identifier to the e-commerce system, and to present the list to the user. An advantage of this embodiment is that it allows for easy browsing of the related items. This way, the user is more inclined to shop from those related items, since they are, by association, also of interest to him.

The invention further relates to a portable content processing device according to the preamble, which facilitates impulse shopping in an e-commerce system.

This object is achieved in a portable content processing device comprising a receiver for receiving a content item from a source for rendering the content item to a user, a rendering device for rendering the received content item to the user, an input device for marking the content item being rendered as being of interest to the user; and a tracking buffer for storing in response to said marking an identifier for the marked content item to facilitate automatically providing the identifier to an e-commerce system.

Portable devices typically do not have a direct link to an e-commerce system, yet they should still be able to function in a manner similar to the content processing system described above. To this end, the portable device according to the invention is provided with a tracking buffer, which stores the identifiers until they can be provided to an e-commerce system. This could become possible, for example, when the portable devices comes in the vicinity of a base station or transfer device, or if the user activates a transmit function. The portable device could be a handheld computer, which the user can connect to a mobile telephone to establish a connection to a network. Once he is connected to the network, the portable device can automatically provide the identifier stored in the tracking buffer to the e-commerce system.

The invention further relates to a transfer device according to the preamble, which facilitates impulse shopping in an e-commerce system.

This object is achieved in a transfer device comprising a first relay for receiving from the portable device an identifier for the marked content item, and a second  
5 relay for automatically providing the received identifier to an e-commerce system.

When the portable device is unable to establish a connection to a network of some kind by itself, a transfer device can be used as an intermediary. The portable device is placed in or nearby the transfer device, and data is transmitted from the portable device to the transfer device and therefrom to a more powerful system or a network, and vice versa. The  
10 transfer device is thus an ideal vehicle to facilitate directly providing the identifier of a marked content item to the e-commerce system.

In an embodiment the transfer device is arranged to add the identifier for the marked content item to a shopping list for the user. An advantage of this embodiment is that the user can now effectively impulse shop using his portable device, even though it has no  
15 direct connection to a network or any other system. When he uses the transfer device, identifiers for the items he marked are provided to the e-commerce system automatically, and when he subsequently visits the e-commerce system, he can immediately buy them.

In a further embodiment, the transfer device is arranged to obtain a list of items related to the marked content item from the e-commerce system in response to  
20 providing the identifier to the e-commerce system, and to transfer the list to the portable device. The generation of this list of related items may take some time, whereas a portable device is often only coupled to the transfer for a very short time. An advantage of this embodiment is that it allows the portable device to obtain the list of related items even in this situation. The transfer device keeps the list in a local memory until the portable device is  
25 coupled to it, and then uploads the list to the portable device.

These and other aspects of the invention will be apparent from and elucidated with reference to the embodiments shown in the drawing, in which:

30 Figure 1 schematically shows an arrangement comprising a number of content processing systems and an e-commerce system; and

Figure 2 schematically shows an arrangement comprising a number of portable content processing devices, transfer devices and an e-commerce system.

Throughout the figures, same reference numerals indicate similar or corresponding features. Some of the features indicated in the drawings are typically implemented in software, and as such represent software entities, such as software modules or objects.

Figure 1 schematically shows an arrangement comprising a first content processing system 100, a second content processing system 130, and an e-commerce system 160. The systems 100, 130, 160 are connected using a network of some kind. This can be for example the Internet, or a cable network, a dial-up phone connection or a combination of networks.

The first content processing system 100 and the second content processing system 130 have respective receivers 101, 131. These can be, for instance, an antenna to pick up signals from the ether, or a connection to a cable network or the Internet. Using these receivers 101, 131, the content processing systems 100, 130 are able to receive content items such as television programs, radio broadcasts, songs, pictures and so on, from a service provider. The thusly-received content items can be rendered by respective rendering devices 102, 132 and output using output devices 103, 133. The exact way in which a content item is rendered depends on the type of content processing system and the type of content. For instance, in a radio receiver, rendering comprises generating audio signals and feeding it to loudspeakers. For a television receiver, rendering comprises generating audio and video signals and feeding those to a display screen and loudspeakers. For other types of content, a similar appropriate action must be taken. Rendering may also include operations such as decrypting or descrambling the signal, synchronizing audio and video signals and so on. The content processing system 100 is shown by way of example as a radio receiver with loudspeakers 103, and the content processing system 130 is by way of example shown as a television receiver with display screen 133. The content processing system 130 could also be a set-top box, with the rendering device 132 and screen 133 located elsewhere.

The content processing systems 100, 130 also have respective input devices 104, 134, shown as buttons on the systems 100, 130 and on a remote control 135. These input devices 104, 134 are used for marking a content item, preferably the content item being rendered, as being of interest to a user. These input devices can be provided as buttons in hardware or in software, be drawn on a display such as display 133 or on a touch-screen area, or be made available as menu items or icons in a user interface for the systems 100, 130. The input devices can also use audio or visual input from the user, for example by detecting a



voice control command issued by the user, or detecting a gesture or action by the user, such as raising his thumb towards the input device.

The button 134 can also be provided on a separate control device, such as remote control 135. In that case, pressing the button on the separate control device has the same effect as pressing the button on the system 130.

When a user uses the input device 104, 134 to mark an item as being of interest to him, the content processing system 100, 130 can add an identifier for the marked content item to a list, such as a bookmark list or list of favorite items. Such an identifier is usually provided with the content item. It can be, for example, the Uniform Resource Locator (URL) or other Uniform Content Identifier (URI) of the content item. It can also be a code, such as an ISBN or another number identifying the content item at an e-commerce system. The identifier can also simply be the title of the content item. The input device 104, 134 may be coupled to a confirmation mechanism, to guard against marking undesired content items. In that case, marking a content item comprises using the input device and confirming the use through the confirmation mechanism.

The system 100, 130 can also show more information on the content item in response to using the input device 104, 134. For example, the title, artist or performer of the content item may be shown, or a webpage having more information on the content item could be retrieved and rendered.

In order to facilitate impulse shopping, the input devices 104, 134 are coupled to respective tracking devices 106, 136. When the input device 104, 134 is used, the tracking device 106, 136 determines an identifier for the content item to which the input action applies, and provides this identifier to the e-commerce system 160. If the identifier supplied with the content item is usable outside its original context, then it can be used directly. For example, the title of a movie is usually sufficient to start shopping for it in the e-commerce system 160. However, if the identifier is a code which is only used by the provider who supplied the content item, then it needs to be mapped to another code first. The tracking device 106, 136 could obtain this other code using meta-information present with the content item. It could also request this other code from the provider, or calculate it itself by doing an analysis of the content. For example, an electronic book may contain its ISBN on one of the first pages, and since the format of the ISBN is known, it could be extracted automatically by scanning the text for this known format. The ISBN can then be used at the e-commerce system.

Providing the identifier to the e-commerce system 160 is preferably done nearly instantaneously, but if for example no permanent connection with the e-commerce system 160 is available, the tracking device 106, 136 must wait until there is such a connection, and then automatically provide the identifier to the e-commerce system 160. In order to facilitate e-commerce, the user who marked the content item should also be identified in some way, for example using his login name at the e-commerce system 160, or with some other identifier supplied to him by the e-commerce system. If the e-commerce system 160 is available over the World-Wide Web, then it could use a cookie to store an identifier for the user at the content processing system or at some location where the tracking device 106, 136 can obtain it and send it along with the identifier for the content item to the e-commerce system 160.

The identifier of the marked content item can be used in many ways in the e-commerce system 160. To facilitate direct impulse buying, the identifier can be regarded as a purchase request, and the content item can be shipped to the user without further action being necessary. The identifier can also be added to a shopping list 161 for the user, so he will encounter it at his next time shopping, he will remember it from when he marked it, and he can then order it. This shopping list 161 can have the purpose of a wish list, where the user and his/her friends can see items which the user would like to own, or a list with the contents of a shopping cart with items that should be bought right away, and so on. The shopping list 161 can be stored in a storage medium 162 at the e-commerce system, where it can be maintained by a list maintenance module 163. It can also be stored in the content processing system 100, 130, where the user can use it later when he visits the e-commerce system. Storing the wish list or shopping list 161 locally has the advantage that the user can use the same list at multiple e-commerce systems. However, not all systems have the storage space for storing the list 161.

The e-commerce system 160 could also generate a list of items related to the marked content item. For example, when the user listens to a song and marks that, the list could comprise various performances of that song, or various formats in which the song can be bought. It could also comprise other songs by the same singer or band, or other songs on the same theme. If the user marks a television program as being of interest to him, the list could comprise videos with previous episodes of the marked television program, or merchandise such as dolls representing characters in the television programs, books about the program or clothing with a logo for the program.

The e-commerce system 160 could also use a recommendation scheme to determine items that are related to the marked content item. Such a recommendation scheme involves keeping track of which items people buy, and using this to suggest items to the user. For example, if many people who mark a specific TV show as being of interest to them buy a book by one of the actors in the show, then the user who also marked the TV show as being of interest to him could be offered the book in question. Combinations of purchases can also be used as input: if many people buy items X and Y together, and the user bought item X, then item Y should now be on the list, since there is a good chance he might want to buy it. Of course, items X and Y should be related to the marked content item.

Thus, after the list has been generated, the content processing system 100, 130 receives the list from the e-commerce system 160 in response to the marking of the content item. The content processing system 100, 130 can then present it to the user. The list is preferably presented to the user in such a way that shopping from it is made very easy. Presenting the list could be done as soon as it arrives, but it could also be delayed until a more appropriate point in time, for example when a commercial break begins or when the song ends. The list could also be redirected to a system from which the user can more comfortably buy the items, such as his computer or television, when he marks content items on a system such as a portable audio player.

The e-commerce system 160 can also use the identifier to create customized offers. For example, if a user marks several items by the same artist as being of interest to him, the e-commerce system 160 could offer him a compilation CD of that artist at a discount. The e-commerce system 160 thus learns from the user's marking of items which items the user likes. This can be used to generate, for example, the above-mentioned list of related items in a more reliable fashion.

Figure 2 schematically shows an arrangement comprising a first portable content processing device 200, a second content processing device 220, first and second base stations 210, 230 and the e-commerce system 160. The portable content processing devices 200, 220 can be coupled to a transfer device 240 when information needs to be transferred to and from the portable device. This coupling can be using infrared or radio transmission, or by connecting the portable device to the transfer device using, for instance, a serial port. The transfer device 240 could be telephone base stations or docking stations. The transfer device 240 and the e-commerce system 160 are connected using a network of some kind. This can be for example the Internet, or a cable network, a dial-up phone connection or a combination of networks.

The portable devices 200, 220 have respective receivers 201, 221, for instance an antenna to pick up signals from the ether, or a wireless connection to the Internet. Using these receivers 201, 221, the devices 200, 220 are able to receive content items such as television programs, radio broadcasts, songs, pictures and so on, from the base stations 210, 230. The thusly-received content items can be rendered to the user by respective rendering devices 202, 222. As an illustration, the first portable device 200 is shown as a mobile telephone comprising antenna 201 and display screen 202, and the second portable device 220 is shown as a portable audio player comprising an antenna 221 and headphones 222. Other portable devices, such as handheld computers, are similarly equipped. Most of their functionality is usually realized in software. The first portable device 200 can, for example, show content items on its display 202 which are formatted using a standard such as the Wireless Application Protocol (WAP).

The portable devices 200, 220 have respective input devices 203, 223 for marking the content item being rendered as being of interest to a user. If the portable devices 200, 220 have a two-way connection with the transfer devices 210, 230, then using the input devices 203, 223 can be handled in the same way as described above with reference to Figure 1. However, portable devices may not have a two-way connection available, and if they do it may be expensive to use it, so the user will want to use it as little as possible, and in any case use it only when he chooses to do so. A portable radio, for example, can only receive radio signals but not transmit them. A handheld computer can be connected to a mobile phone, but this requires manual intervention by the user. And the user will, given the typical charges for mobile telephony, not do this every time he marks a content item as being of interest to him. Therefore, the portable devices 200, 220 are further provided with respective tracking buffers 204, 224 for storing in response to said marking an identifier for the marked content item to facilitate automatically providing the identifier to the e-commerce system 160.

To automatically provide the identifier to the e-commerce system 160, the portable device 200, 220 must then be brought in contact with the transfer device 240. This transfer device 240 has a first relay 241 for receiving from the portable device 200, 220 an identifier for the marked content item. It also has a second relay 242 for automatically providing the received identifier to the e-commerce system 160. Using these relays 241, 242, the identifier is provided from the portable device 200, 220 to the e-commerce system 160 automatically and transparently to the user. It is possible for the base stations 210, 230 to serve as a transfer device as well. For example, if the portable device 200 creates a network

connection with the base station 210, then this connection will most likely be two-way, and then the base station 210 can be used to provide the identifier to the e-commerce system 160.

When a portable device 200, 220 is used, it makes the most sense to maintain the wish list on the e-commerce system 160, since storage space is often very limited on portable devices. The transfer device 240 can provide the identifier to the e-commerce system 160 for inclusion in the wish list or shopping list 161 of the user. It can also, by means of the second relay 242, obtain a list of items related to the marked content item from the e-commerce system 160. When the user next connects his portable device 200, 220 to the transfer device 240, the transfer device 240, by means of the first relay 241, then transfers the list to the portable device 200, 220. To this end, the transfer device 240 should keep the list in local storage until the portable device 200, 240 is connected. The transfer device 240 could also, if possible, directly obtain the list from the e-commerce system 160 and transfer it to the portable device 200, 220 immediately. In any case, the portable device 200, 220 then presents the list to the user.

The receiving systems 100, 130 could also make use of a transfer device. For example, when the receiving system is a television receiver, the set-top box or gateway to the in-home network to which said television receiver is connected could then assume the role of the transfer device. When the television receiver is turned off before the list could be obtained from the e-commerce system and transferred to the receiver, the set-top box or gateway saves it locally until the television receiver is turned on again, and only then transfers it.

While the input devices 104, 134, 203, 223, the tracking devices 106, 136, and the tracking buffers 204, 224 are presented in the embodiments of Figures 1 and 2 as separate components, it will often be the case that these devices and buffers are realized by computer software, which is executed by some central processing unit. Thus, for instance, the input device 134 may be a picture of a button drawn by the system 130, and when the user selects this button using a mouse or other selection aid, the system 130 determines the position on the screen 133 which was selected, concludes that the picture of the button was selected, and executes the appropriate action to mark the content item being rendered as being of interest.

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## CLAIMS:

(61)

1. A content processing system (100, 130), comprising  
a receiver (101, 131) for receiving a content item from a source for rendering  
the content item to a user;  
an input device (104, 134) for marking the content item as being of interest to  
5 the user; and  
a tracking device (106, 136) for in response to said marking automatically  
providing an identifier for the marked content item to an e-commerce system (160).

2. The content processing system (100, 130) of claim 1, further comprising a  
10 rendering device (102, 132) for rendering the received content item to the user.

3. The content processing system (100, 130) of claim 1, wherein the tracking  
device (106, 136) is arranged to add the identifier for the marked content item to a shopping  
list (161) for the user.

15 4. The content processing system (100, 130) of claim 1, being arranged to obtain  
a list of items related to the marked content item from the e-commerce system (160) in  
response to providing the identifier to the e-commerce system (160), and to present the list to  
the user.

20 5. A portable content processing device (200, 220), comprising  
a receiver (201, 221) for receiving a content item from a source (210, 230) for  
rendering the content item to a user;  
a rendering device (202, 222) for rendering the received content item to the  
25 user;  
an input device (203, 223) for marking the content item being rendered as  
being of interest to the user; and

a tracking buffer (204, 224) for storing in response to said marking an identifier for the marked content item to facilitate automatically providing the identifier to an e-commerce system (160).

- 5     6.             A transfer device (240) for use with the portable content processing device (200, 220) of claim 5, comprising
- a first relay (241) for receiving from the portable device (200, 220) an identifier for the marked content item; and
- a second relay (242) for automatically providing the received identifier to an e-
- 10 commerce system (160).
7.             The transfer device (240) of claim 6, being arranged to add the identifier for the marked content item to a shopping list (161) for the user.
- 15     8.             The transfer device (240) of claim 6, being arranged to obtain a list of items related to the marked content item from the e-commerce system (160) in response to providing the identifier to the e-commerce system (160), and to transfer the list to the portable device (200, 220).

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ABSTRACT:

(61)

The invention relates to content processing systems such as a TV, radio or mobile phone (100, 130, 200, 220), equipped with an input button (104, 134) with which the user can mark content items he likes. An identifier for the marked content item is then supplied to an e-commerce system (160), for example for inclusion in a shopping list (161) or to obtain a list of related items. In portable content processing devices (200, 220), the identifiers are buffered until they can be transmitted to a transfer device (240). This facilitates automatically providing the identifier to the e-commerce system (160).

Fig. 2.



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(61)

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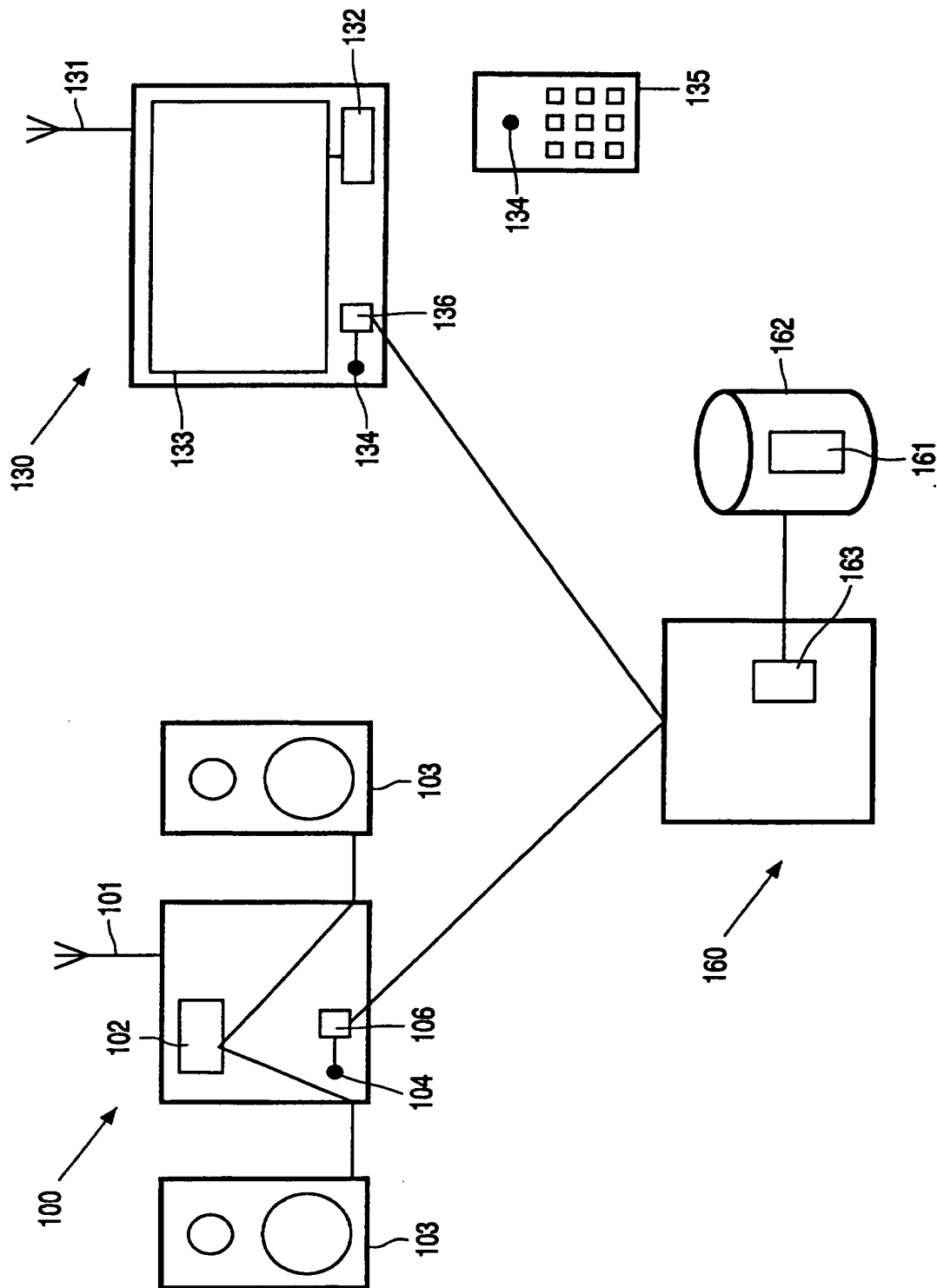


FIG. 1

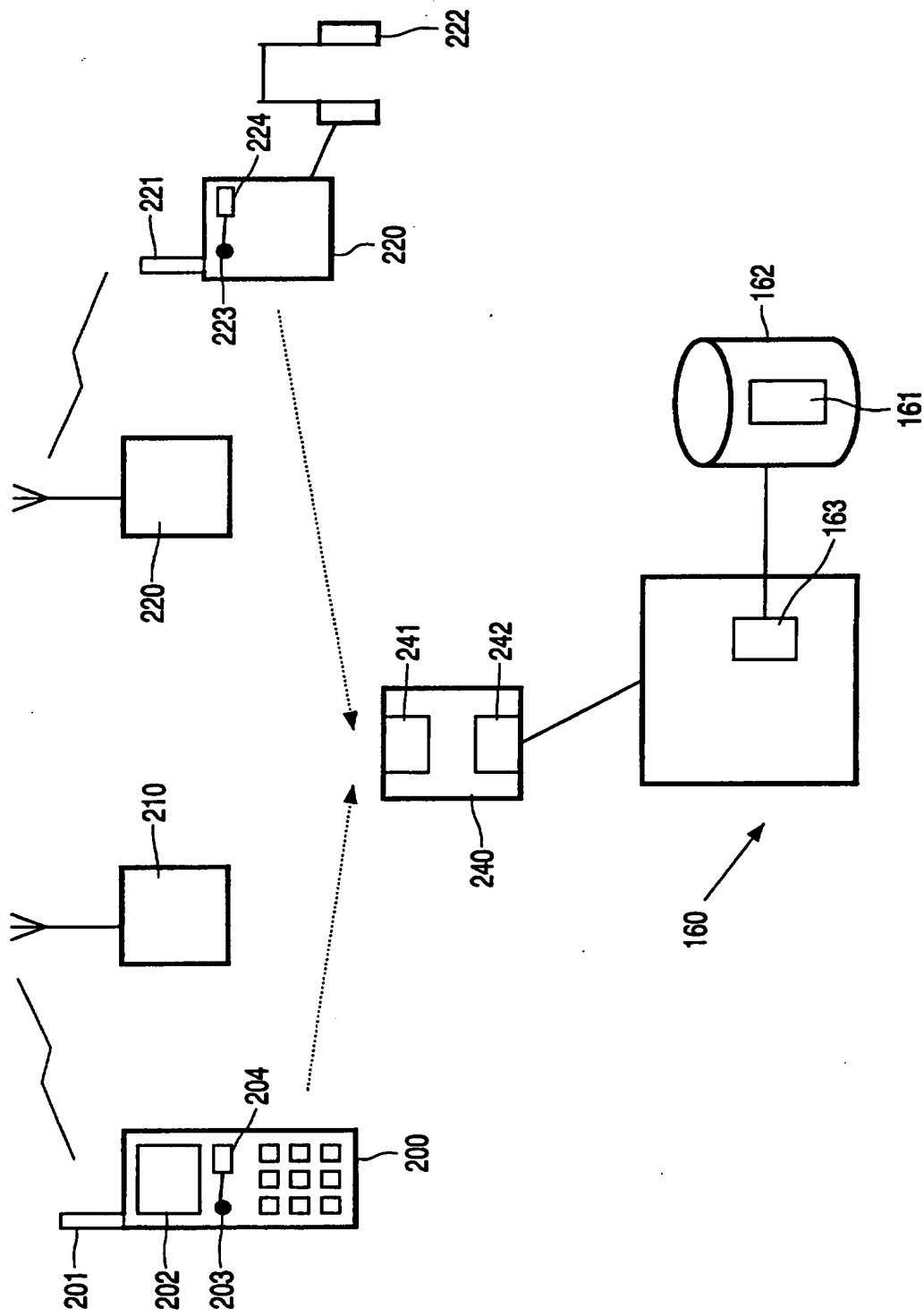


FIG. 2